REVIEWS.

Art. XI. *Materialien zu einer künftigen Heilmittellehre durch Versuche der Arzneyen an gesunden Menschen*, gewonnen und gesammelt, Von Dr. Johann Christian Gottfried Jœrg, Ordentlichem Professor der Geburtshülfe an der Universität zu Leipzig, &c. &c. Erster band. 8vo. pp. 500. Leipzig, 1825.

Materials to serve for a future System of Materia Medica, arranged, &c. by J. C. G. Jœrg, Professor, &c.

NOTWITHSTANDING the accessions to our knowledge of physiology and pathology for which we are indebted to the labours of our immediate predecessors and contemporaries, and they are undoubtedly neither few nor unimportant, it must, nevertheless, be confessed that they have not produced that improvement in therapeutics which might reasonably have been anticipated. This has arisen not so much from an obstinate adherence to antiquated dogmas, nor a neglect on the part of the profession generally to the rapid progress of our science, as from our actual ignorance of the real mode of operation upon the living system of the several remedial agents in daily use. We are, in fact, better enabled to arrive at a correct diagnosis of disease—to determine with accuracy the seat, nature, and degree of morbid action in any given case, than to direct with skill the appropriate remedies for its removal. While in regard to the first we reason from scientific principles established upon facts, in regard to the latter we have little better for our guide than mere empiricism. What physician, and we ask the question boldly; what physician, even the best informed, is able to determine, with any degree of certainty, the changes which any one remedy, administered during health or disease, will produce in the vital actions or properties of the several tissues? He may have formed to himself certain opinions as to its mode of action; but upon what data, other than bare speculations, are those opinions founded? The majority will be found to be without even this shadow of system, and to be directed in their plans of treatment merely by the fact, that in other cases, under apparently similar circumstances, the administration of certain remedies has been followed, very generally, by a cessation of the morbid phenomena.

In proof of the trifling improvement which the doctrines of the materia medica have undergone, in comparison with what has been effected for almost every other branch of the medical science, let us refer to the latest of our systematic treatises. We there find still the same artificial and arbitrary classification of remedies—the same hypothetical definition of their several properties, almost the same rules for their administration as were adopted when pathology and physiology were in their infancy, or at the furthest consisted merely of a set of doctrines framed in the closet, and to which facts and accidental discoveries were made invariably to bend. Even the few particulars in relation to the properties of certain remedies, upon which light had been thrown by the investigations of an occasional experimenter, have produced but little change in the science of materia medica. If noticed at all, it is merely incidentally, while under the influence of a vicious arrangement and nomenclature their importance is but seldom recognised.

It has been, and still is, too much the practice to determine the properties of a remedy from some one of its more striking effects, as purgation, emesis, ptyalism, &c. or its sedative or stimulating influence upon the actions of the heart or of the sensorium. The change in the vital actions of the tissues, upon the production of which either of these phenomena depend, are, in almost every instance, overlooked, or hypothetically assumed; and yet it is only from an accurate acquaintance with these changes that we can determine its power of replacing the existing morbid actions of a part by those of health; in other words, of determining the propriety or impropriety of its exhibition in any given case. In relation to a still larger class of remedies than those just referred to, our ignorance is even more profound. We talk fluently of tonics, astringents, antispasmodics, alteratives, and the like, but in no one instance can we be said actually to understand the action upon the living tissues of the articles included under these several denominations. Until we shall arrive at a knowledge of their effects, that is, of the modifications which they produce in the vital actions, the practice of medicine, so far at least as these classes of remedies are concerned, must partake more or less of empiricism and uncertainty.

It is well known that, at no very remote period, the whole practice of medicine consisted, first, in determining the character of a disease by ascertaining the situation, in some favourite system of nosology, of the group of symptoms in which its more striking phenomena were comprised; and secondly, of applying for its cure a set of remedies whose respective properties were indicated by the name under which they were arranged in the lists of the materia medica. This convenient system has, it is true, fallen of late years somewhat into disrepute. But while our pathological researches have assumed a more elevated and scientific character—while our indications of cure are now governed less by arbitrary names and classifications of symptoms, yet, so far as it regards our practice, whatever partial improvement it may have experienced, it is still too much influenced by the names and hypothetical properties ascribed to our ordinary remedial agents.

We do not mean to say, that amid all the important changes which the natural sciences have experienced within the present century, the materia medica has not advanced a single step; on the contrary, many facts in relation to the remedies most frequently employed have been forced upon the notice of the physician by the results of daily experience. Thus, we have discovered that all remedies of the same class do not act in a similar manner upon all parts of the system; that in many instances the secondary effects are widely different from those which follow more immediately the administration of a remedy, and that, in nearly every instance, the nature and extent of the action produced by a remedy, are modified, in a very important manner, by the dose and manner of its administration, as well as by the condition of certain *organs* at the period when it is given. An acquaintance with these circumstances has had a very beneficial influence, in many points of view, upon practice. But as our knowledge of them extends scarcely beyond that of the bare facts, we are incapable of so extensive and important an application of it to the cure of disease, as we probably should, were we acquainted with the relative action of our remedies upon the different tissues, and the modifications which their effects upon each of these undergo by an augmentation or diminution of dose, and other variations in the mode of their administration. It is as much from the want of this kind of knowledge, as from any other cause, that the differences of opinion which we find to exist among even our best practitioners upon the virtues to be attributed to a given remedy, or mode of practice, in certain diseases, have originated, as well as the frequent disappointments which are daily experienced in the effects anticipated from the same remedy when exhibited in what are presumed to be parallel cases. There is, indeed, scarcely a single property which has been ascribed by one set of physicians to any one of the articles which are to be found in the lists of the materia medica, that is not positively denied to it by some other. Examine cautiously into the causes of this discrepancy of opinion, and it will be found, most probably, that in nine cases out of ten both parties are in the right—the difference between them resulting entirely from the different circumstances under which the remedy has been administered by each.

In referring a large class of those errors in practice, still pertinaciously adhered to by most physicians, to the vicious nomenclature of our materia medica, we can scarcely be accused of attributing too great an influence to a mere name. The history of human knowledge shows conclusively, that the nomenclature of every science has invariably exerted a most powerful influence in retarding or accelerating its progress; and a very little reflection will be sufficient to convince every unprejudiced mind, that so long as the names of our remedies indicate a hypothetical or imaginary property, or express only one, and that perhaps the most remote, and, in a therapeutical point of view, least important of their effects, so long will we be prevented from arriving at a correct knowledge of their true nature and properties, and of administering them skilfully for the removal of disease. If "words" in the strong language of a celebrated French writer, if "words are things," in other terms, if clearness and precision in language is the surest indication of the clearness and precision of our ideas, then in no science is a correct nomenclature more loudly called for than in the materia medica, where a mistake, originating solely from the influence of an erroneous name, may, nay has been the means of prolonging the sufferings, and of destroying the lives of thousands.

The whole science of materia medica presents, in fact, a field that will amply reward the labours of the industrious investigator. He who directs his attention to its proper cultivation, will contribute essentially towards the improvement of medical science.

In relation to the best plan to be pursued, in order to arrive at a correct knowledge of the actual properties of remedial agents, not a little diversity of opinion may be expected to occur. The different views entertained by physicians upon various points in physiology and pathology, cannot fail to influence their decisions upon the present question.

That much important information may be acquired by a close and careful examination of the operation of the remedies administered during the existence of disease, is unquestionable. This plan of investigating the remedial properties of the various articles of the materia medica, must, therefore, be kept constantly in view. Nevertheless, we can scarcely expect by it alone to acquire all the information necessary to establish those general principles upon which alone a correct system of therapeutics can be based. Even were we justifiable in *experimenting* to any extent with our remedies in a case of disease, the opportunity is possessed only by such as have the charge of a large hospital, for making that extensive series of comparative observations from which any satisfactory results are to be anticipated. In the ordinary course of practice, remedies can seldom be administered for any length of time in such a manner as to enable us to decide accurately upon their respective effects. The treatment of very few diseases is confined to the administration of a single remedy, and when medicines are given in combination, or are had recourse to within short periods of each other in the same case, it is impossible to determine the effects referable solely to one or other of them. In many instances also the phenomena which occur subsequently to the exhibition of any given remedy, cannot with propriety be assumed as the absolute effects of that remedy, as they may have been very materially modified by the peculiar morbid condition, in that case, of the brain, the heart, the stomach, or some other important organ. Even the phenomena caused by the extension of morbid action to a tissue different from that originally affected, may occasionally be mistaken for the effects of the remedy employed, whereas the latter has had, in all probability, no influence in producing them. We are to recollect also that the operation of nearly all our remedies during disease is most generally studied under circumstances which render it very difficult, if not impossible, to arrive at any thing like a fair conclusion. In consequence of preconceived opinions, formed, as well in regard to the properties of a given remedy, as to the nature and phenomena of the morbid action it is administered to controul, it is not easy for the physician to determine, with any degree of certainty, what modification has been produced by it in the latter, nor whether, upon the whole, its effects have been beneficial, or otherwise. In a numerous class of diseases, the remedies employed, and to the action of which, the cure is confidently attributed, exert either no influence, or a positively injurious one. A cautious abstraction of all sources of irritation, whether moral or physical; bland diluents substituted for a solid and stimulating diet, as perfect quietude of body and of mind as can be obtained, and the observance of similar *negative* rules, has often been the means by which disease has been effectually checked, and the normal grade of action restored to the diseased tissue, when the medicines administered, and to which the beneficial result is solely ascribed, have either produced no effect whatever, or have tended to keep up the morbid action for a longer period than it would have continued had their use been entirely dispensed with. Clinical observations upon the effects of remedies, are hence liable always to so many sources of error, that even when made with the greatest degree of caution, they can be viewed only as partial and imperfect. The only plausible means of completing and verifying such observations, the repeated employment, namely, of the same remedies in similar doses, and in the same class of cases, even were it capable of furnishing us with the desired result, is productive of too much risk to the patients, to permit it to be pursued to its requisite extent.

The absolute effects produced by our remedies upon the vital actions of the several tissues, and the modifications which these effects undergo by a difference in the dose and mode of administration, can be satisfactorily tested only by a careful investigation of the phenomena which result from their administration during health. It is this plan that has been adopted and carried into effect by Dr. Jörg, of Leipzig, and the details, together with the results of which constitute the subject of the work, the title of which is placed at the commencement of this article.

We are aware that the information obtained by this means, leads us but one step towards an acquaintance with the remedial properties of our several remedies; it is however the primary and most important step. It furnishes us with positive data by which to test and correct the observations made upon the operation of the same articles during disease, and by establishing certain general facts in relation to the effects of our remedies, it will enable us to decide at once, and with very great certainty, upon the propriety or impropriety of their administration in any given case of disease. Thus, if it be incontestibly proved from its effects upon the healthy subject, that a certain article acts as an irritant upon the stomach, bowels, or brain—whatever may be its effects in relation to any one of the remaining organs—however important these latter may be for the removal of the existing disease, there are few enlightened pathologists who will not admit the impropriety of its administration, when the stomach, bowels, or brain is actually inflamed, or in a state approaching to that of inflammation.

By an investigation of the effects of remedies, exhibited during health, we shall be enabled to distinguish their comparative influence upon the vital actions of different tissues, a point very difficult to arrive at, by merely watching their operation during disease, and yet one of very great importance in determining their correct therapeutic application. In the same manner we shall be enabled to distinguish between the primary and secondary effects of a remedy, which, in many cases, are the very opposite of each other; as well as the difference in the impression which it produces upon one or other of the tissues, when these are kept constantly under its influence, by the use of small and repeated doses, and that which results from a single maximum dose. Of the important practical application of these facts, and the prejudicial effects upon practice, caused by an ignorance or neglect of them, every experienced physician must be fully aware.

An intimate acquaintance with the action of our remedies, under the several points of view just referred to, will not only enable us to direct their administration for the cure of disease with a greater degree of success than heretofore, but, in all probability, it will place at our disposal new and effectual means for the removal of various morbid conditions of the tissues, which are now beyond our controul, or can be subdued only by subjecting other and important parts to the risk of disease.

It has been objected to experiments performed with remedial agents upon the healthy system, that they afford us no positive information as to the effects of the same agents in disease, inasmuch as their action "upon a diseased organ is essentially different from what it is upon the same organ when in a state of health." But is this proposition established by facts? Is it true, that the *nature* of the action which is produced by any agents upon a diseased tissue, is *essentially* different from what it is when the tissue is free from disease? We believe not. The action of a remedy may certainly be modified; we know, in fact, that it is, and to a very considerable extent, by the morbid condition of one or other of the tissues; but never does this modification extend so far as to amount to an actual change in the *nature* of the action produced. An article which produces, for example, a stimulant or sedative impression upon a healthy tissue, will produce a similar impression upon the same tissue when diseased, provided always the disease has not already produced in it disorganization. The susceptibility of the tissue to the action of a remedy may be greatly diminished or increased by its particular morbid condition, or the state of certain portions of the nervous system, but so far as it is susceptible to the effects of the article, these effects will invariably be the same, differing only in degree, from those produced by it during health. It is true, that the excitability of a part may be so far morbidly increased, as to cause the same articles which in its normal condition merely excited it to healthy action, to produce in it the most violent stimulation; this however so far from contradicting, confirms our general proposition. We may, therefore, without hesitation, assume it as an axiom, that the effects resulting from the action of any given remedy upon the healthy tissues, are to be assumed as the *positive* effects of that remedy, under all circumstances whether of health or of disease. For although these effects may be modified by the particular deviation of one or other of the tissues from their normal condition, yet the nature of the action produced, is still the same in character, differing only in degree.

If it be found that a certain class of remedies, administered to an individual during health, invariably augments the activity of particular secretory organs, causing them to pour forth an increased amount of their respective fluids, it may safely be inferred that the same effect will be manifested by these remedies during a diseased condition of the system. If any difference is observed, it will be found to result from a change, not in the action of the remedies, but in the susceptibility of the organs to their influence. So likewise, if any substance shall be discovered to produce during health a sedation in the vital actions of the mucous, serous, nervous, or other tissues, this effect, we may be assured, will also take place from the use of that article, when the particular tissue is labouring under a morbid exaltation, or depression of its vital energies. All the objections which have been made to the plan of determining the properties of our remedies, from their effects upon a healthy individual, are, in truth, founded either upon erroneous views of physiology, or pathology, or upon inferences drawn from facts imperfectly or inaccurately observed.

There is one class of physicians who object to this plan of investigation, from a belief that all our remedies act only by producing a certain morbid impression upon the system of a less dangerous character than that constituting the existing disease, but which, at the same time, is capable of subverting the latter, and then ceases spontaneously. Hence they argue, that the desired effects, produced by our remedies, can take place, and their nature be judged of only during the presence of disease—that by the very same operation by which they subvert morbid action when this actually exists, they may even produce, when given during a healthy state of the organs, more or less of disease. From this error, has in a great measure, originated that mischievous perturbative system of practice, which, dignified by the appellations bold and decisive, has been pursued to so great an extent by the physicians of this country: and which, in numerous cases, so far from being adapted to effect a speedy and effectual cure, we have no hesitation in saying, is the means of fixing the existing malady more deeply in important structures, and of increasing very considerably its duration and fatality.

The great object which the physician should have in view in the cure of disease is to remove the existing morbid action, as speedily as possible; and at the same time with the least risk to those structures which are either not at all or but slightly affected. In many cases, instead of exciting a new and more friendly disease, all that is necessary is to keep the part in which the disease is seated, in a state of complete rest, by abstracting from it as much as possible the natural as well as all accidental stimuli. In other instances the grade and extent of the morbid action is such, that it can only be promptly and effectually removed by the administration of such remedies as are adapted by either a direct or indirect action, to restore the disordered functions of the affected tissues to their normal grade. It is true that among the latter class of remedies are included some that operate by exciting or depressing the actions of certain portions of the system not involved in the existing disease; of these the only ones the remedial operation of which can in any manner be considered as dependent upon a morbid effect produced by them on the part upon which they act, are those termed counter-irritants or derivatives, and perhaps the contra-stimulants of certain Italian writers. But widely different is the operation of the whole of this class of remedies, from that revolutionary or perturbative effect upon which it has been supposed the remedial power of all the articles of the materia medica depends. This latter is supposed to consist in a certain morbid action produced by the different remedies throughout the whole system, including the diseased tissues, and in a great measure, if not entirely, distinct from that which takes place from the action of the same remedies upon the healthy system. Now, in no case does the primary operation of counter-irritants take place upon a tissue actually suffering from disease; while their effects both direct and indirect, are well understood, and identical with those produced by the same remedies in a healthy individual. It is only from our perfect acquaintance with their mode of action, and the certainty with which we can in general calculate, *a priori*, their effects, that we are enabled to apply them successfully for the diminution or removal of disease.

Although the plan of testing the remedial properties of the different articles of the materia medica by their effects upon the healthy system has been long pursued, and notwithstanding the observations collected in this manner are extremely numerous, yet few of them are calculated to afford the same practical inferences as those detailed by Dr. Jörg in the work before us. The older experimenters were often led into very gross errors by their misconceptions of many important points in physiology, as well as by their ignorance of the science of general anatomy; independent of which their conclusions are defective, from their having confined their attention exclusively to the remote operation of the remedies administered, overlooking entirely their primary and intermediate effects. The more recent observations of HAHNEMANN, although founded upon numerous and diversified experiments, are so completely infected with his own peculiar views of pathology and therapeutics, that they are of little value to any but an adherent of the homœopathic school.

It was from a full conviction that much important information was yet to be acquired in relation to the mode of operation of our remedies, that the Leipzig professor was induced to establish a society for the express purpose of pursuing, under his superintendence, a systematic series of experiments with the leading articles of the materia medica, with the view of ascertaining their effects upon the healthy tissues; hoping to be enabled in this manner, as he modestly expresses it, to afford the ground-work upon which may hereafter be erected, by the labours of other experimenters, a more correct system of materia medica.

The society is composed of twenty-seven members; of these, twenty-two, including Dr. Jörg, are either students or practitioners of medicine; two are the sons of the professor, the one a lad of sixteen, and the other of fourteen years of age; and three females, the one forty-five, the other eighteen, and the third twelve years of age. The professor at the period when the experiments were performed was forty-five years of age, and the medical gentlemen associated with him were from twenty-one, the age of the youngest, to thirty-two years, the age of the eldest, a minute description is given of their respective constitutions, temperaments, &c. &c. which we do not think it necessary here to recite. All the members of the society were of regular and temperate habits, to which they closely adhered, while testing upon themselves the effects of the various remedies. Each remedy was administered in different doses to different individuals, or at different periods, and the effects produced by a given dose of an article upon each person are separately expressed, great care being observed not to confound the results obtained by the administration of different doses to the same or to different individuals.

In the prosecution of these experiments every thing appears, in fact, to have been carefully attended to that was calculated to ensure the correctness of the results. The whole undertaking confers great credit upon Dr. Jörg, and places in a very favourable point of view the zeal and industry of his associates. Of their joint labours, an account has been published by the former, under the unassuming title of "materials towards a future system of materia medica." Of this work we have been enabled to procure only the first volume, and which is probably all that has yet appeared. It contains the experiments made by the society upon the effects of nitre, cherry laurel water, water of bitter almonds, valerian, serpentaria, the flowers and root of the arnica montana, camphor, musk, castor, St. Ignatius' bean, assafœtida, opium, digitalis, and the tincture of iodine. The series of experiments performed with each of these articles is given in detail, and is followed by a summary of the general results derived from them, drawn up by Dr. Jörg.

In presenting to our readers a brief account of the work, we shall be obliged to pass over the experiments and confine our attention solely to the results. To enter into an examination of the former would require much more space than can be afforded for a single review, for it must be evident that any attempt to condense them within our narrow limits would scarcely be doing justice to the experimenters, while it would afford but little satisfactory information to our readers.

In our account of the general conclusions drawn from each series of experiments we can do little else than translate the words of the author. However desirable it might be to compare occasionally his statements with the opinions generally entertained in relation to the operation of certain remedies, as well as with some of the therapeutical precepts of the physiological school, we dare not attempt it on the present occasion.

Nitre.—From the experiments made by Dr. Jörg and his colleagues with purified nitre, in various doses, he believes it may be inferred with certainty, that it acts as an excitant upon the kidneys, the alimentary canal and the skin. By its action upon the kidneys it increases the natural secretion of urine in quantity and quality. Its diuretic effects are, therefore, the most certain of those to be anticipated from its use. Acting as an excitant upon the whole of the alimentary tube, it modifies to a greater or less extent the functions of that organ and those which are auxiliary to it. It causes first an increased secretion of saliva, followed by a dryness of the mouth, the fauces and œsophagus; it occasions also a sense of thirst, increased appetite, and pain of the stomach, similar to that arising from an inflammatory irritation of that organ; eructations, (in large doses vomiting,) a sense of bearing down or of cutting pain of the small intestines, flatulency, with discharges of wind, diarrhœa, and occasionally when the operation of the remedy takes place more especially upon the small intestines, the kidneys or the skin, constipation. It is evident, however, that the nitre acts likewise upon the large intestines, its use being so commonly attended with an inclination to stool without any evacuation from the bowels being produced. Its action upon the skin, in exciting an increased exhalation, was not found, in the experiments performed by the society, very constantly to follow its administration. Whether, however, the nitre exhibits its threefold operation upon the kidneys, skin and alimentary canal, or its effects are confined more especially to a single one of these organs, its administration, in moderate doses, is never followed by any secondary effects, nor does it influence directly any other organs than those enumerated. It gives rise to vertigo, pain in the head and delirium, only when taken in excessive doses. The immediate effects produced by this article have deceived the profession as to its real properties, and have caused it to be directed in cases in which it can either do no good, or is altogether improper. Thus, when a portion of nitre is swallowed immediately after it has been dissolved in water, there is experienced a sensation of coolness in the fauces and œsophagus, and frequently in the stomach, also, which continues for several minutes. It is, however, invariably followed by the effects of the remedy already enumerated, particularly by heat and dryness of the parts in which the sense of coolness has been felt, which latter are always greater in proportion as the first has been most marked. The slower also the pulse is rendered by the cooling effects of the article, the more rapid it becomes subsequently. Hence, it is evident that nitre cannot with propriety be considered as an antiphlogistic; its action as an irritant upon the digestive organs, the kidneys and the skin, precludes the possibility of its producing any beneficial modification upon tissues labouring under inflammation. All substances which augment the activity of the secretory organs, predispose these to inflammation, whenever from any cause they act upon them with increased intensity; nitre undoubtedly possesses the first of these properties, hence it must necessarily possess the second, if administered in large doses, or under improper circumstances. Inflammation of the stomach and intestines, has, it is well known, actually resulted from its use. Without stopping to inquire whether this article acts upon the digestive organs in a chemical or dynamic manner, a distinction which it is impossible to make in the living body, I must insist, Dr. Jörg remarks, that it can no more be ranked with the class of antiphlogistics than can arsenic. From the very circumstance of its exciting to increased action the three great secretory organs, it is reasonable to conclude that, to a certain degree, it excites also the nervous and arterial systems; so certain am I, he adds, that it does so act, that I am convinced its prolonged use would be decidedly injurious, but especially to the digestive and assimilatory organs.

We have seen that the nitre acts as an excitant upon the skin, the kidneys, and the alimentary canal, and being aware that diuretic remedies excite likewise the internal organs of generation, especially the nitre, which increases the action of the two secretory organs in the more immediate neighbourhood of the former, it must be evident that it cannot with propriety be administered in inflammatory affections of the genito-urinary apparatus. When, likewise, we recollect that, generally speaking, a remedy which is given during the existence of those diseased conditions of the tissues which it has a tendency itself to induce, acts injuriously, even in minute doses, by augmenting the intensity of the disease, their propriety of prohibiting the use of nitre in all genuine irritations or inflammations of the abdominal organs generally, will be perceived at once. The nitrate of potash is contra-indicated also in those cases in which the skin is the seat of irritation or of inflammation, whenever it cannot be administered in such a manner as to occasion a derivation, by its action upon the intestinal canal or the kidneys. As a purgative, the operation of the nitre is very uncertain; it is in every respect inferior to many other articles of that class. As a diuretic in the greater number of dropsies, we have other remedies much more efficacious, and which do not, like nitre, where its use is continued for any length of time, produce a prejudicial effect upon the stomach and bowels. In cases, however, where the effusion of fluid has been the result of an inflammatory condition of the serous membranes, nitre will frequently be found a valuable remedy. As a diaphoretic, little dependance is to be placed upon it.

When, however, we desire merely to excite by it the actions of the intestinal canal and the genito-urinary apparatus, without reference to its secondary operation, the remedial effects of the nitre will be advantageously exhibited. Thus, in all the inflammatory affections of the head, either internal or external, of the throat, and, occasionally, of the chest, it may be administered with good effects. As it does not act when given in small doses upon the cerebro-spinal apparatus, it is a useful remedy in the encephalitis of children, and may be employed instead of calomel, from the excessive use of which, in such cases, so much injury has been produced. From the experiments made with the nitre upon the female members of the society, it is presumed, that in many instances it will be found a very excellent emmenagogue. In the dose of from three to five grains, repeated morning and evening, the nitrat of potash will be found to produce a moderate excitement of the digestive and urinary apparatus. Occasionally it will, however, require from eight to ten grains of the remedy to produce this effect, which is indicated by flatulence, and an increased desire to urinate. pp. 43 to 52.

Cherry laurel water.—The article made use of in the experiments of the society was prepared according to the Saxon Pharmacopœia, by distilling three pounds of liquid from a mixture of six pounds of water, one ounce of rectified alcohol, and one pound of fresh laurel leaves chopped fine. The laurel water thus prepared was found to act in very different degrees upon different individuals. In some of the members it required four times the dose, that it did in others, to produce the same symptoms. Its ordinary effects were a heavy, pungent, and deep-seated pain in the head, principally at the forepart, about the region of the optic nerves; a numbness of the whole body; relaxation of the pulse in proportion to the pain of the head; lassitude; inclination to sleep, or even somnolency; feebleness of the muscles, especially those of the thighs; disinclination to exertion; an itching and tickling at the larynx, as in the commencement of inflammation of this part; frequent cough, and an increased secretion of tough mucus into the trachea. Administered in small doses, the effects of the laurel water continued only for two, three, or four hours, but in larger doses, for six, eight, or twelve hours, including also its secondary effects. The irritation of the larynx, however, continued often for many days.

While, in its immediate effects, the laurel water produces a prompt and transient excitation of the brain, a turgescence, either dynamic or material of that organ, followed by numbness and tensive pains of the head, its secondary effects, such as diminution of consciousness, relaxation of the pulse, and general lassitude of the body, never fail to occur. It is from these last effects alone that the remedy has been assigned its place in the materia medica; but we must recollect that they cannot be obtained without a preceding momentary exaltation of innervation. It is on this account, Dr. Jörg conceives, an improper prescription in cases of encephalitis, or whenever congestion of the brain is to be apprehended. It is useful only in inflammations of the abdomen, and of the genital apparatus, or rather in cases in which the sensibility of these organs is exalted without inflammation. He believes also that it will be found injurious in inflammatory affections of the lungs, in consequence of its exciting an irritation in the larynx and trachea, producing cough, and causing a dryness of the fauces. It is especially beneficial in those diseases of the genital organs of the female, which are accompanied with augmented sensibility, whether inflammatory or not. In the primary stages of scarlatina, and in puerperal fever, when the brain exhibits symptoms of disease, the laurel water is an improper remedy. It must be evident that this article can be employed only with the greatest caution in spasmodic and convulsive affections. In all diseases of this class, depending upon an excitation of the brain, or upon a general or partial compression of that organ resulting from an engorged state of its vessels, the laurel water will be injurious. From the different manner in which the remedy acts upon different individuals, great circumspection is demanded in its use even in those cases in which it is demanded. Dr. Jörg is of opinion that we may safely prescribe it in doses of from three to twenty-four drops, repeated, according to circumstances, from two to four times a day. It is to be recollected that the article rapidly loses its strength, particularly when the vessel in which it is contained is frequently opened. pp. 71 to 76.

Water of bitter almonds.—This preparation was found to be less active and certain than the preceding article, though it acts in the same manner. p. 81.

Hydrocyanic acid.—The prussic acid, obtained according to the plan of VAUQUELIN, was taken by several members of the society in the dose of from one to three drops in an ounce of water, and in that quantity was found to occasion tensive pains of the head, and a troublesome itching of the throat, resembling the sensation which many persons experience after having eaten freely of dry nuts. Experiments were likewise made with this acid upon cats, rabbits, frogs, and crows, and after death it was ascertained by dissection that the hydrocyanic acid had invariably decomposed the blood, which, by the effects of the poison, is made to assume a venous character, and to accumulate in the veins and right cavities of the heart. In order the better to establish this fact, Dr. Jörg placed under a microscope a living frog, in such a manner as to expose a portion of its mesentery, in its mouth was then introduced the acid. As death did not take place until fifty-six minutes after the first dose of five drops, and about thirty-five minutes after the second dose, full time was given for a minute examination of their effects. After the first dose the blood continued to circulate regularly for several minutes; it passed more quickly through the arteries, and more slowly through the veins. At the end of about ten minutes the course of the blood in the veins became still slower, in the arteries it continued the same, and did not alter for eight or ten minutes subsequently. There then occurred from time to time a stasis in both sets of vessels, but this happened more frequently, and continued much longer in the veins than in the arteries. On the approach of death, retrograde movements of the blood in the former took place, but of short duration. About fifteen minutes after death the blood in the veins had assumed a violet hue, while at the commencement of the experiment it was of a bright red. In the artery, on the contrary, the blood, which had been also of a bright red, became pale, almost white. The artery itself became more contracted, while the size of the veins was unchanged. The blood now ceased to flow, at first in the capillaries, and a few moments after in the veins, while the artery continued still to move on its contents, which were nearly colourless, in jerks. Finally, the motion of the artery ceased, and the entire cessation of life occurred —the animal not having, however, exhibited the least evidence of sensibility in any part of its body for fifteen or twenty minutes previously. Repeated experiments of a similar nature gave the same results. From the series of observations upon the effects of the hydrocyanic acid made by himself and colleagues, Dr. Jörg draws the following conclusions. This substance acts in a very prompt and violent manner upon the brain and nervous system. Its effects are more prompt and decided upon the encephalic nerves than upon those of the ganglionic system. The first momentary excitation of the brain and nerves, is sooner or later followed by depressed innervation or by death. When it does not destroy life at once, it occasions an inflammatory irritation of the trachea, but especially of the larynx. In some cases it would appear also to augment the secretion of urine. The excitation produced in the brain by the acid is followed, according to Dr. J. almost immediately, by congestion of that organ, giving rise to a heaviness and tensive pain in the head. The congestion increasing in extent causes a state of numbness and stupor. The affection of the brain influencing the whole of the nervous system, all of the functions, especially those connected with sensibility, suffer in consequence. Thus, the power of the muscles diminishes with their sensibility, and this debility is the more quickly felt in those, the strength of which have been reduced from any cause. As the acid acts with more promptitude and violence upon the cerebro-spinal system than upon the ganglionic, the voluntary muscles feel of course more quickly its influence than the involuntary; life is also always extinguished the latest in those groups of the latter which possess ordinarily the greatest degree of vigour. Hence the left side of the heart preserves its activity longer than the right; and the great arterial trunks circulate the blood for a greater length of time than the veins. This explains the cause of the accumulation of the blood in the veins and right side of the heart, particularly the auricle, as well as the vacuity of the left ventricle and large arterial trunks. In explanation of the appearance of the blood produced by the prussic acid, Dr. Jörg remarks, that when the activity of the nerves of the lungs is considerably diminished, and the lungs are in consequence reduced to a state almost of paralysis, the functions of these organs are but imperfectly performed. The inspirations being feeble, and repeated at considerable intervals, the venous blood sent to the lungs is not sufficiently oxygenated, and it returns to the heart but little changed, or it is retained in the lungs, no longer being fitted to circulate through their vessels. Dr. J. conceives that it is doubtless this paralytic state of the lungs which causes most of the uneasiness which those animals experience who are not immediately destroyed by the poison. When the lungs still retain sufficient vigour to enable by degrees the process of oxygenation in the blood to be reëstablished, we may be certain that the animal will recover, as the blood as it becomes more perfectly arterialized, will gradually restore the energy of the nervous system. It is on this account, doubtless, that the phenomena resulting from moderate doses of the acid, are so quickly removed by the action of cool air. Death, therefore, from the action of the hydrocyanic acid, may be caused in two ways. First, by the immediate and total destruction of sensibility; and the second, by paralysis of the nerves of respiration, death resulting from asphyxia. In the two cases dissection will reveal the existence of very different lesions. In the first case the cessation of life is almost instantaneous, and no morbid phenomena are discoverable. In many of the animals poisoned by Dr. J. he was not able to distinguish even the presence of the peculiar odour of the acid in the stomach, a very important fact to the medical jurist. In the second case we recognise a venous appearance of the blood even in the arteries, and as the vessels of the brain and of its membranes are especially surcharged with venous blood, many have believed that this is to be considered the principal cause of death.

As a medicinal agent, so low is the hydrocyanic acid estimated by Dr. J. that he desires to see it expunged from the lists of the materia medica, and the laurel water adopted in its stead. The reasons he gives for this, are—the difficulty of preparing properly the acid; the facility with which it becomes decomposed; the uncertainty of its operation—half a drop producing occasionally the most violent effects; and lastly, the difficulty of introducing it into the mouth. If to these we add that the primary effect of the remedy is to produce a powerful excitation of the nervous system, and an irritation of the larynx; and that by its secondary operation it depresses the general sensibility of the system, and causes sleep, stupor, and cough, effects which result in a less marked degree from the laurel water, which at the same time is more easily administered, it becomes evident, according to our author, that the latter is far preferable as a remedial agent to the former.

If employed at all, the hydrocyanic acid is to be restricted as a remedy to those cases solely, in which the use of the laurel water is proper. It may be given in the dose of half a drop every four, six, or eight hours, mixed with an ounce of distilled water or of milk. The milk should not be added to it but at the moment when it is to be taken. Its use should not be persisted in for any length of time; it is absolutely improper in the cases of children, the activity of whose cerebral system is naturally very great. If by its use we desire to diminish the quickness of the pulse, and render the blood less plastic, in violent cases of phlegmasia of some of the abdominal organs, we should administer the acid, (or the laurel water,) in a maximum dose, and at the shortest intervals; if, on the contrary, we merely propose to modify by it the condition of the nervous system in certain of the neuroses, the smallest doses will be more proper. The hydrocyanic acid of ITTNER being stronger than that of VAUQUELIN, should be given only in the dose of from a quarter of a drop to a drop. pp. 97 to 107, and 127.

Valerian.—Numerous experiments were made on the valerian by the members of the society. It was taken in infusion, in the dose of from two to three drachms of the root in four ounces of water, or in powder, in the dose of half a drachm to a drachm of the root, or in the form of tincture, in various doses. In some cases no effects whatever were produced by it; in others it acted upon the brain, and in others again upon the alimentary canal. When the brain was acted upon, a moderate excitement of that organ was first observed, indicated by serenity of mind, gaiety, and a disposition to occupation; to this a slight degree of congestion succeeded, as was shown by a degree of confusion of mind, and by heaviness and pain of the head, but there was never that feeling of prostration and of lassitude of the whole body, somnolency, or profound sleep, preceded by frequent gaping, which is caused by the action of substances which produce a powerful impression upon the brain. When the alimentary canal was the part acted upon by the valerian, eructations, a sense of fulness in the stomach, inappetence, flatulence, cutting pains, tenesmus, frequently discharges from the bowels of consistent stools, and sometimes, when the valerian excited to increased secretion the biliary organ, nausea, and a bitter taste in the mouth. From these effects of the article it is evident that it must give rise to a congestive condition of the alimentary canal and liver, occasioning in every instance a turgescence of the abdomen, and probably a more abundant secretion of urine, with a change in the properties of that fluid. The valerian produces likewise a very slight acceleration of the general circulation, and when taken in the form of a warm infusion acts as a diaphoretic. But this effect of the remedy is very uncertain, and may not depend immediately upon the valerian. Dr. Jörg further remarks, that the action of half a drachm of this substance taken at once continues for about four hours; that of two drachms, twelve hours; that its action upon the digestive organs is most easily induced by the powdered root, and its action upon the brain by the infusion; and finally, that the disagreeable taste of the infusion passes away quickly, while that of the powder remains for several hours. The secondary effects of the valerian, congestion of the head, or of the abdomen, point out the necessity of restricting its use as a remedy to such cases as are entirely exempt from any tendency to a morbid determination of the circulating fluids to either of those cavities, and which at the same time are attended with an actual depression of the vital powers. For individuals affected with hæmorrhoids and stases of blood, the valerian is a remedy altogether improper: although it has very generally been recommended in cases of typhus fever, yet when we reflect upon its tendency to produce an overfulness of the vessels of the brain, it must be evident that there are few diseases in which it may not be employed with greater propriety. It is likewise a very improper remedy in those spasmodic affections which are produced or kept up by an exaltation of sensibility, or by an engorgement of the vessels of the brain or of the organs of assimilation.

Of the valerian, half a drachm is a small dose for an adult; a drachm constitutes a medium dose, and a drachm and a half, or two drachms, a large dose. Accordingly as we desire it to act chiefly upon the abdomen, or the brain, the powder or the infusion is to be employed. Pages 152 to 158.

Serpentaria.—Experiments were performed with the serpentaria, in the form of infusion, in doses of from two to five scruples of the root, in four to eight ounces of water, and also in the form of powder, in doses of from fifteen grains to one scruple. It was found to excite the intestinal canal, producing a determination of blood to all the abdominal viscera, and to occasion flatulence rather than an increased mucous secretion. The phenomena usually following its administration, were eructations, nausea, vomiting, pains and a sense of weight in the stomach, borborygmy, colicky pains of the intestines, frequent expulsion of wind, tenesmus, consistent stools, sometimes increased, and at others diminished appetite, tumefaction of the abdomen, especially at the epigastrium, and itching around the anus. In other instances, it produced a sense of heat, weight and pain in the head, indicating a degree of congestion of the brain; it was found also, sometimes to produce an excitement of the circulation, and in other cases, an increased secretion of urine, due probably to the excitation of the intestinal tube. It may be presumed in the same manner, to excite also the genital system. The infusion of serpentaria would appear to act, more upon the brain, the powder more upon the abdominal viscera. The effects of this remedy, when administered in small doses, continue during eight or twelve hours; in larger doses during eighteen to twenty hours. On this account it should not be repeated more than twice in the twenty-four hours; a single dose a day is sometimes sufficient. The medium dose for an adult is one drachm of the root, either in powder or infusion.

From the result of his experiments with this remedy, our author concludes that the serpentaria can be useful only in cases attended with a torpid condition of the intestinal canal. As it tends to arrest the mucous and other secretions from the mucous membrane of the bowels, it is principally useful in chronic diarrhœa, unconnected with inflammation. In colliquative diarrhœa also, not attended with phlegmasia, it will be beneficial. On the contrary, it should not be exhibited in those cases, in which the intestinal torpor is connected with congestion, or phlogosis, however slight, of the abdominal viscera, nor when congestion of the brain is to be apprehended. It is improper also during a flatulent condition of the intestines. pp. 179 to 182.

Flowers of the arnica montana.—In the experiments of the society, the flowers of the arnica taken in infusion, in doses of from seven to thirty-six grains, in four ounces of water, were found to produce a very decided irritation of the whole tract of the alimentary canal, but especially of the œsophagus, stomach, and small intestines; the irritation being rather of the muscular tissue than of the blood-vessels; of course, the article chiefly produced increased contractions of the canal, increasing but little the secretions into its cavity. It caused a modification also in the quantity and quality of the urinary secretion. The irritation resulting from the infusion of arnica flowers, extended likewise to the brain, probably through the medium of the nervous plexus of the stomach and intestines, upon which it principally acts; and by its joint operation upon the brain and digestive organs, it produces secondarily an acceleration of the circulation, and an augmentation of the cutaneous exhalation. By inducing in the pharynx and larynx, a species of itching, the arnica flowers excite also a cough in cases in which the trachea and lungs are very irritable. The effects of this article continue for twenty-four or thirty-six hours. In very irritable habits, one to two grains of the flowers infused in a spoonful of water, will be a proper dose; in less irritable habits, three to five grains in half an ounce of water; when the remedy commences to act, the dose should be repeated only once in twenty-four or thirty-six hours.

The flowers of the arnica are improper in all affections of an inflammatory character, or which are attended with either general or local irritation, particularly when the latter is seated in the head or abdomen. When, on the contrary, the viscera of these two cavities, or the whole body, are in a state of debility; when states of the brain or abdomen are to be removed, or parts affected with paralysis to be excited, then the flowers of the arnica may be found useful. They may be prescribed with advantage also, in an inactive condition of the bowels, connected with diminished nervous, or muscular energy, as well as in chronic effusions within the brain. They also afford an excellent means for rousing the powers of the sensitive, locomotive, and circulatory apparatus, when their torpor is dependent upon strictly chronic affections. Externally, an infusion in eight parts of water caused heat and itching of the skin, but no redness; and the flowers applied themselves, produced in eight hours redness without subsequent affection of the cuticle. Hence they are to be viewed as a useful rubefacient of the mildest kind. pp. 207 to 214.

Root of the arnica montana.—The tincture of the root was found to be less efficacious than the infusion, a fact observed by Dr. J. in reference to several other drugs. The tincture may be useful, he thinks, in cases attended with great weakness of the stomach, and atony and torpor of the intestines. Dose from twenty-five to fifty drops, to be repeated every twenty-four or thirty-six hours, provided it does not excite fever. The infusion of the root irritates to a less degree the alimentary canal, than that of the flowers, its action is also slower and milder, and it produces less excitement of the brain, hence our author concludes, that it should be preferred in cases of chronic or colliquative diarrhœa, without inflammation, where the indication is to strengthen the intestinal canal, without increasing its mucous secretion. The doses of the root are the same as those of the flowers. Besides the effects already described, both the flower and root would appear to have a powerful effect in stimulating the absorbents; they may therefore be really useful, as they have been described by many, in removing chronic effusions into the brain, and indurations of various parts of the body. In this respect they have some analogy to calomel, but are much more liable to produce inflammation. In his experiments, Dr. J. has found that of the remedies denominated resolvents, the primary action is invariably an excitation of the alimentary canal. pp. 226 to 230.

Camphor.—Experiments were performed with camphor, taken in the form of powder, in the dose of half a grain, and in that of tincture in doses of from half a grain to four grains. From these experiments it was found that camphor stimulates directly the brain and alimentary canal, and indirectly the urinary organs, the skin, and the circulatory organs. Its effects upon the brain were very different in the different members who tried it, precisely as in the case of alcoholic liquors, some experiencing much excitement, followed by a profound sleep, while others experienced little or no cerebral disturbance. It increased the heat of the surface in all, and often produced an increased exhalation from the skin; it also increased the quickness and strength of the pulse, modified the secretion of urine in quantity and quality, and was found to excite actively the organs of generation. Dr. Jörg therefore concludes, that camphor is to be proscribed in all acute inflammatory cases; in irritation affecting the urinary organs, and in every condition of the cerebral system, either connected with congestion, or in which congestion is to be feared. It is indicated only in cases of pure debility; and as it does not, like valerian and arnica, produce congestion of the abdominal viscera, it should be employed in preference to the latter, in the treatment of tympanitis and colliquative diarrhœa, unconnected with inflammation. The dose is from half a grain to a grain, or more. The effects of each dose continue for about four to six hours. pp. 265 to 274.

Castor.—In the dose of twenty grains, castor produced in all the members who experimented with it, disagreeable eructations, but no appreciable effect on any of the tissues: in small doses it produced no effect whatever. Dr. Jörg therefore infers, that it may, with propriety, be erased from the list of the materia medica. pp. 283 to 285.

Musk.—The musk was taken by different members of the society, in doses of from two to fifteen grains. It was not found by any means to be so diffusible a stimulant as it is generally considered to be. It nevertheless powerfully excites the alimentary canal and the brain, giving rise to eructations, sense of weight in the stomach, sometimes diminished, and at others increased appetite, and dryness of the throat. Its action on the brain is evinced by a sense of weight in the head, pain and giddiness, followed by yawning, somnolency, sense of depression and weight throughout the body, and finally, deep, prolonged sleep. It large doses it caused tremblings, and even slight convulsions of the limbs. The musk excites also the circulation, causing the pulse to become fuller and more frequent. It does not communicate its peculiar odour, as is generally believed, to the sweat, urine, or feces. As a remedial agent, our author concludes, that musk can be employed only in cases of atony of the brain and nervous system, unattended with congestion; but that it is not a remedy so well adapted, as is generally supposed, to cases of extreme nervous debility, the excitement which it at first produces being soon followed by a corresponding collapse. The dose is from three to five grains. The effects of each dose continue for eight or twelve hours. pp. 305 to 306.

St. Ignatius' bean.—Experiments were made with this article in the form of tincture and powder. Doses of from half a grain to four grains of the powder, and from nine to ninety drops of the tincture, made of one ounce of the bruised seeds, to eight ounces of alcohol, were taken by different members It was found to produce ptyalism, nausea, weight and pain of the epigastrium, increase or loss of appetite, eructations, borborygmy, colic, constipation, or purging, and heat or itching around the anus. To these followed a sense of weight in the head, vertigo, dull pains of the occiput, forehead, temples, and eyes, ophthalmia, with increased secretion from the meibomian glands, and subsequently prostration, somnolency, aversion to labour, and apathy, with, occasionally, acceleration of pulse, and a sense of creeping and heat in the urethra. The remedy therefore in its primary effects, produces an excitement of the alimentary tube, of the glands which appertain to it, and of the brain. These effects disappear, and are renewed several times. Dr. Jörg recommends the article as a remedy in cases of atony of the alimentary canal, accompanied with chronic engorgement of the glands, provided the patient is not of too irritable a habit; in all diseases of a periodic character; in atony of the brain, and in feebleness of vision. The dose to commence with, should be half a grain of the powder once in twenty-four hours, which may be gradually increased. pp. 341 to 345.

Assafœtida.—The assafœtida was taken in doses varying from one to fifteen grains. It was found to produce a very considerable excitement of the alimentary tube, especially the œsophagus, stomach, and small intestines. It stimulates likewise the brain, producing congestion of that organ, indicated by dull pain of the upper part of the head, forehead, and eyes. It excites also the circulation and the organs of respiration. But the secondary effects of the assafœtida are chiefly manifested upon the genito-urinary apparatus. Hence it is a proper remedy in an atonic state of the intestinal canal, or other organs, or indeed of the system generally. Dr. J. doubts, however, the propriety of its use in hysteria and hypochondriasis, as these diseases are, in the majority of cases, accompanied with congestion of the abdominal viscera, and with constipation. It is ordinarily given in too large and too frequently repeated doses; from half a grain to one grain, the doctor found to be in general sufficient, and that the effects of each dose continued until the second or even third day. pp. 381 to 385.

Opium.—The opium was taken by different members in substance, and in tincture made by digesting one part of opium in three parts of rectified alcohol and the same quantity of distilled water. The powder was employed in doses of from a twelfth of a grain to three grains with a few grains of magnesia. The tincture in doses of from one to thirty-six drops, both being taken in a spoonful or two of water. From these experiments the professor concludes that opium is undoubtedly to be ranked among those substances the primary effects of which are to excite every part of the system, and the secondary to determine a state of collapse proportionate to the extent of the previous excitation. Its action is experienced particularly by the brain, hence the lightness of head, extraordinary gaiety, and other phenomena analogous to those of intoxication, followed by heaviness of the head, vertigo, dull pains, inclination to sleep, and finally deep and prolonged somnolency. The excitement produced by the article extends likewise to the whole nervous system. The secondary effects occur so rapidly, especially when the opium is given in large doses, that the period of excitement is often overlooked. After the brain and nerves, the alimentary canal is the part upon which its effects are chiefly exhibited. It occasions here contractions, especially of the stomach and small intestines, a sense of weight in the epigastrium, colic and tenesmus. To these primary effects succeed constipation, flatulent intumescence of the abdomen, with tenesmus unattended with alvine evacuations. In small doses the effects of opium are confined to the sensitive and digestive apparatus, in larger doses it effects secondarily the circulatory organs, the skin and the genito-urinary apparatus, producing in their functions modifications varying in degree and character according to the dose and the idiosyncrasies of individuals.

Dr. Jörg is of opinion that as a remedial agent, opium is adapted to the treatment of a very small number of cases; he had himself employed it but rarely for the ten years preceding the date of the present work. The diseases in which he believes it may be useful, are erethism, distinct from inflammation of the alimentary canal, with increased secretion from the mucous tissue, accompanied with vomiting and diarrhœa; and the morbidly increased secretions from the skin and genito-urinary apparatus. In these cases the primary effects of the remedy do little harm, and its secondary modify beneficially the morbid condition of the affected parts. In administering the opium to adults, the author believes that a twelfth to a quarter of a grain will be the most prudent dose to begin with; where the sensibility is very acute even a less dose will be required. The tincture being less active, a quantity containing one-third of a grain of opium will be equivalent to a fourth of a grain in substance. The smallest dose should not be repeated oftener than every six hours; and large doses not oftener than every twenty-four hours or even at longer intervals. When the secondary effects are those chiefly desired the doses should not be repeated too often as the second dose excites anew the stimulant action of the remedy. Opium is best administered in a mucilaginous injection when the erethism of the intestines is confined chiefly to the lower portion of the canal as indicated by continued and painful tenesmus. The proper dose for an injection is half a grain to a grain. Pages 437 to 444.

Digitalis.—By different members this article was taken in doses of from half a grain to three grains of the powdered leaves in a spoonful of water, with or without magnesia. Its primary effects were a powerful and direct excitement of the brain, of the alimentary canal, and of the genito-urinary apparatus, and its secondary a diminution of the activity of the circulation. On the brain, its action was indicated by intoxication, weight in the head, vertigo, dull head-ache, increased heat of the face, and obscuration of vision; on the alimentary canal, by a sense of heat and itching in the pharynx and œsophagus extending sometimes to the larynx and trachea; weight and cutting pains of the stomach and intestines, increased or diminished appetite, expulsion of wind, frequent stools, &c.; on the urinary organs, by a remarkable increase in the secretion of urine, observed in every individual, save one; the urine being sometimes paler, sometimes of a deeper colour than natural; on the genital organs by a remarkable itching in the glans penis, erections, and pollutions in the male, and in the female, by symptoms identical with these which precede the menstrual flux. The consecutive effects of digitalis are a diminished activity of the circulation indicated by the diminished size, force, and frequency of the pulse. The depression of the circulation was always, however, preceded by excitement. From these results Dr. Jörg concludes that the digitalis is very far from being an appropriate remedy in inflammatory affections; hence it is contra-indicated in hooping-cough, in acute hydrocephalus, and in all cases of effusion connected with inflammation of the serous membranes, cases in which it is ordinarily recommended; that it can be beneficially administered only in cases of atony of the urinary organs accompanied with a deficient activity in the digestive tube; or in those in which an inactivity of the genital system is associated with debility of the intestinal canal or of the system generally. He questions altogether the propriety of its employment in the morbid affections of the heart, as its depressing effects will prove injurious in many and useless in most of them. The dose should be from a quarter of a grain to a grain of the powder, and as soon as its effects are exhibited, the repetition of the dose should be differed for twelve, twenty-four, or forty-eight hours; its effects often continuing for this space of time. In too great doses the author is inclined to believe that it may induce an inflammation of the urinary organs and a consequent diminution rather than an increase of the secretion of urine. The effects produced by a decoction of digitalis resemble very nearly those of the powdered leaves; those of the tincture and infusion are weaker, hence the necessity of giving these in larger doses. Page 468 to 473.

Tincture of Iodine.—The tincture of iodine employed in the experiments of the society was made by dissolving forty-eight grains of iodine in an ounce of rectified alcohol. It was taken by the members in doses varying from one to ten drops, the latter being equal to one grain in substance. Its absolute effect was found to consist in an excitation of the entire alimentary canal. It seemed to affect the mucous tissue in the manner of the saliva or of pure pancreatic juice, but more actively; producing a saline taste in the mouth, increased flow of saliva, thirst, augmented appetite, sensible movements of the intestines, slight colic, discharge of wind and of feces. The iodine acted also on the brain, as is the case with all substances which considerably excite the actions of the intestines, producing weight and dull pain in different parts of the head; it augments likewise the flow of blood towards the respiratory organs, causing in these a condition approaching to phlogosis or even actual inflammation; the irritation extends to the mucous membrane of the nose, increasing the secretion from its surface. When given in a large dose, the iodine was found to excite in like manner the genito-urinary organs. All the secretions poured into the alimentary canal become increased under the use of the remedy. It is from its thus augmenting the activity of the glandular apparatus that the powers of iodine in removing indurations and intumescence of the glands are derived. Dr. Jörg conceives that iodine may likewise be employed, with the best effects, in diseases of the abdomen connected with atony of the digestive organ, stasis of blood in the vessels, and in scrofulous affections. It promises to be eminently useful likewise in those cases in which the nutritive functions of the system are morbidly performed from a defect of vital energy. Its employment under all circumstances requires, however, the greatest precaution; administered in excess it will be very liable to give rise to inflammation or to a morbid relaxation of the tissues.

From two to eight drops of the tincture in a small quantity of water constitute an ordinary dose, which should not be repeated more frequently than every twenty-four or forty-eight hours.

We have now finished a very imperfect sketch of the highly interesting contents of the first volume of Dr. Jörg's publication; our readers will no doubt be equally anxious with ourselves for the receipt of the succeeding volumes. A similar course of experiments with those now before us, performed in relation to the remaining articles of the materia medica, will afford to the future inquirer the most valuable data to direct him in his investigations into the remedial properties of the agents best adapted for the cure of disease.

D. F. C.

XII. *The Principles of Medicine, founded on the Structure and Functions of the Animal Organism.* By Samuel Jackson, M. D. Assistant to the Professor of the Institutes and Practice of Medicine and Clinical Practice in the University of Pennsylvania. Carey & Lea, Philadelphia, 1832. pp. 612. 8vo.

THE present may be truly regarded as an important epoch for medical science. The new and important destinies created for it by the discoveries of Bichat, have extended their influence into all its ramifications, and the lights of general anatomy, while they have served to extricate us from the mazes of hypothesis, in which we were before involved, are daily unfolding to us new truths, eliciting new discoveries, and opening the way to new investigations. Under its impulses, and aided by its principles, the science of medicine has already become, in a great degree, freed from the paralyzing influence of mysticism, and the bewilderings of hypothesis, and is making rapid advances to the condition of a science of fixed principles. Its votaries are no longer content with the unmeaning jargon of the schools, and instead of seeking for the characters of disease in some unknown essence diffused throughout the organism—in the mischievous operations of some archæus, or in the mysteries of the vis medicatrix naturæ, they have become at length impressed with the important conviction, that an acquaintance with structure, and a careful investigation of its healthy and diseased properties, can alone conduct to correct principles in medicine, and constitute the only legitimate grounds of rational therapeutics. Anatomy, physiology, and pathology, are the main pillars of medical science, and any superstructure